CCAMS
USER MANUAL

Edition N°: 2.0

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

Edition History

Edition No.	Edition Issue Date	Author	Reason
0.9	18-Nov-2011	A. Schawe	Draft for review
0.91	07-Dec-2011	A. Schawe	Last draft with comments from CUG12, amended AIM messages and restart procedure after level RED
0.92	08-Dec-2011	A. Schawe	Slight corrections in AIM and email, typos in the main body
1.00	09-Dec-2011	A. Schawe	Slight corrections in AIM and email, typos in the main body
1.01	20-Jan-2012	A. Schawe	Add UKSATSE level RED addresses Some changes from CFMU to NM Level RED procedure for Bretigny
2.0	24-Feb-2013	A. Schawe	New email and web addresses MFD helpdesk query Contingency: simplified NMOC procedure; display SSR code in NOP portal

©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL). This document is published by EUROCONTROL for information purposes. It may be copied in whole or in part, provided that EUROCONTROL is mentioned as the source and the extent justified by the non-commercial use (not for sale). The information in this document may not be modified without prior written permission from EUROCONTROL.

Edition No. : 2.0
Edition Issue date : 12-March-2013
Author : Armin Schawe
Owner : CCAMS Office, DNM

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

Table of Content

1 INTRODUCTION 1
1.1 Purpose 1
1.2 Scope 1
1.3 Acronyms Used in this Document 1
2 CCAMS AND THE ACID PROGRAM 3
2.1 The Rationale for Action 3
2.2 Development of the Aircraft Identification Strategy 3
2.3 The 2012 Initial Operating Capability 3
3 THE SSR CODE ALLOCATION PROCESS 5
4 ROLES OF THE PARTNERS INVOLVED IN THE PROCESS 7
4.1 ICAO 7
4.2 European Commission 7
4.3 The Network Manager – Transponder Code Function 7
4.4 The Network Manager – CCAMS Office 7
5 HOW CCAMS WORKS 9
5.1 Level of Automation 9
5.2 Operator Input 9
5.3 Customer Support 10
6 CCAMS OPERATIONS ORGANISATION 11
6.1 Actors inside and outside the NM Operations Centre 11
6.2 Roles and Responsibilities 12
6.2.1 CCAMS Office 12
6.2.1.1 Network Operations Tasks 12
6.2.1.2 SSR Code/ORCAM Management Related Tasks 12
6.2.1.3 Tasks coming from the EU Implementing Rules (Report to Regulator) 13
6.2.2 Role of Network Operations Incident Investigations 13
6.2.3 Role of ORA (Operational Requirements and Acceptance Section) 13
6.2.4 Role of AD - the Airspace Data Section and Operations Team (Operations and Support) 13
6.2.4.1 Airspace Data Operations Procedures 14
6.2.4.2 AD Staffing 14
6.2.5 Role of the NM COM – Current OPS Manager 14
6.2.5.1 Contingency Process 14
6.2.5.2 CCAMS Contingency Procedure 15
6.2.5.3 Disaster Recovery Plan 16

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

6.2.6 Role of NTS - Network Technical Systems 16
6.2.7 Customer technical Service desk & Operations (CSO) – System Monitoring 16
6.2.8 Post Operations Management 17
6.3 Documentation 17
6.4 Contact List 17
6.5 Processes and Workflows 18
6.6 Treatment of Incidents 18
7 ACCESSING CCAMS CENTRAL SERVER INFORMATION 19
8 EXTERNAL COMMUNICATIONS 21
8.1 Messages Exchange 21
8.2 External Phone Calls Received 21
9 MAINTENANCE 23
10 AFTN NETWORK PROBLEMS 25
11 ANNEX 1 CONTINGENCY 27
11.1 CCAMS Contingency Plan 27
11.2 CCAMS Contingency – procedures for the NM Operations Center 27
11.2.1 Event 1 - Level YELLOW 27
11.2.2 Event 2 – level RED 29
11.2.3 CCAMS Contingency in NMOC 34
11.2.4 Global CCAMS contingency workflow diagram 35
11.2.5 Event 3 – Site Disaster 36
12 ANNEX 2 RETRIEVE SSR CODES FROM THE CHMI OR NOP PORTAL 37
12.1 Access CCAMS Information via the CHMI Operational Log 37
12.2 Procedure to retrieve SSR code information from the CHMI 37
12.2.1 CHMI Window Setup 37
12.2.2 Filter and Select CAM and CCM Messages (only display those two types of messages) 37
12.3 Retrieve SSR code from the NOP Portal 40

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

1 INTRODUCTION

1.1 Purpose

The Network Manager is planned to take over the responsibility for the assignment and management of SSR codes from as many as 16 European ANSPs (current planning).

The Centralised Code Assignment and Management System CCAMS will optimise the efficiency of European SSR code management by centrally selecting an SSR code for each flight within its area of applicability using an intelligent algorithm and distributing it to the appropriate ATS unit.

From a technical point of view the service will be provided through a central server managed by the Network Technical Systems (NTS) Unit and a corresponding functionality in participating local FDP systems.

From a procedural point of view the service will be provided from a dedicated CCAMS office which is located in the Network Manager Operations Centre (NMOC).

The purpose of this User Manual is to frame the support of the CCAMS operations and to explain all procedures applicable for CCAMS operations.

1.2 Scope

This document primarily concentrates on key operational pre-requisites and procedures that are common to both sides, the ANSPs and the Network Manager. It does not explain the full institutional or regulatory framework, for example the ICAO Code Allocation List input. Detailed consultation agreements and governance arrangements are not in the scope either.

1.3 Acronyms Used in this Document

- AD Airspace Data Operations
- COM: Current Operations Manager
- CCAMS: Centralised Code Assignment and Management System
- CSO: Customer technical Service desk & Operations
- NMOC: Network Manager Operations Centre
- NTS: Network Technical Systems
- NM Network Manager

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

INTENTIONALLY BLANK PAGE

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

2 CCAMS AND THE ACID PROGRAM

2.1 The Rationale for Action

Unambiguous and continuous aircraft identification is an essential and basic requirement for the provision of air traffic control services in the European region. The current method of using Mode 3/A codes managed though the Originating Region Code Assignment Method (ORCAM) suffers from a number of shortcomings which have been observed over the past years.

Since 2003, the ECAC area has been experiencing increasing problems to have sufficient Mode 3/A codes to cope with traffic demand and respect the ORCAM rules for assigning codes. The shortage of available codes to meet traffic demand has been causing more and more problems for individual ATC units and for the European ATM system as a whole. The main problems being experienced are code conflict with potential loss of identification, frequent changes of code for a given flight and a shortage of codes to meet demand.

The situation was compounded by the technical and operational difficulties encountered in bringing new technologies, notably downlinked aircraft identification using the Elementary Surveillance (ELS) capabilities of Mode S surveillance, into full operational use.

2.2 Development of the Aircraft Identification Strategy

The ANSB created a small dedicated task force to review the options available and to develop a strategy to meet the need for unambiguous and continuous aircraft identification.

The ANSB task force determined that downlinked aircraft identification* is the most effective long-term solution to meet the objective of guaranteeing the unambiguous and continuous identification of individual aircraft within European airspace. As this could not be reasonably implemented across the region before the year 2020, the task force determined that immediate action was necessary to meet the current operational problems.

The task force defined an Initial Operational Capability, consisting of a mixed environment of ELS, along with more efficient use of the Mode 3/A codes through a Centralised Code Assignment & Management System and where necessary an enhanced ORCAM capability which could be implemented by 2012, as a first step to realising the long-term goal.

* Downlinked aircraft identification is achieved through Mode S Elementary Surveillance, ADS-B and Wide Area Multilateration and does not rely on discrete Mode 3/A codes.

2.3 The 2012 Initial Operating Capability

To achieve the 2012 Initial Operating Capability, it is necessary to integrate the operational deployment of three code management procedures and processes within Air Navigation Service Provider systems across the European region in a coordinated and structured manner. At all times the implementation must ensure that the operational methods to establish and maintain aircraft identification within one airspace of the region are seamless and completely interoperable with the methods employed in other airspace volumes of the region.

The three operational methods to be used for establishing and maintaining aircraft identification by February 2012 are Elementary Surveillance (ELS) enabled by Mode S, CCAMS and an Enhanced ORCAM environment (eORCAM).

The 2012 Initial Operating Capability will be underpinned by EC Regulation and by ICAO & EUROCONTROL agreements for non EC states.

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

INTENTIONALLY BLANK PAGE

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

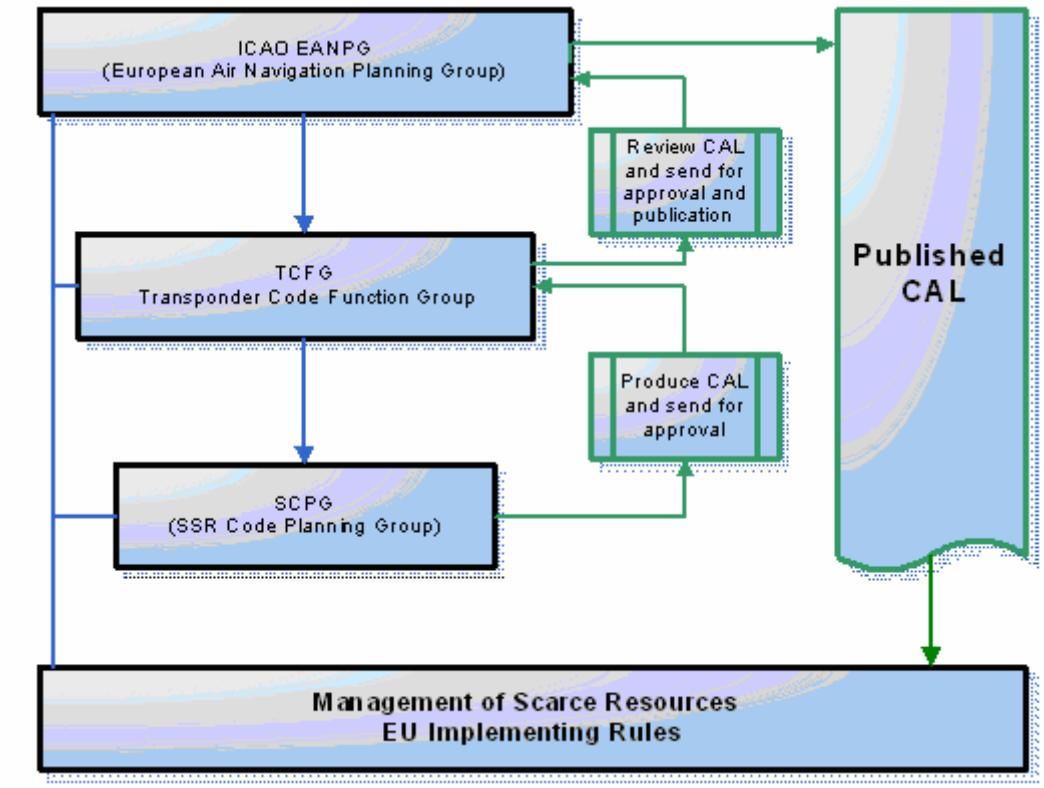
3 THE SSR CODE ALLOCATION PROCESS

There are only 4096 SSR codes available in total, organised through a structured but fairly static usage plan. Unfortunately, this structure fails to provide sufficient SSR codes for current demand due to further increase of traffic but also the change of major traffic flows (Eastern Europe). SSR codes are therefore seen as Scarce Resource.

The Network Manager is tasked (through EU Implementing Rule) to organise the **Management of Scarce Resources.**

A Code Allocation List (CAL) is produced in coordination with all participating states on a regular basis. The production of the CAL is done on behalf of the ICAO EANPG (European Air Navigation Planning Group) by the SCPG (SSR Code Planning Group) which reports to the TCFG (Transponder Code Function Group).

The CAL describes in detail the allocation of all codes among the States and ATS Units and is a result of internationally agreed procedures, processes and co-ordination.



The Code Allocation list is used to determine which SSR codes are to be used by CCAMS, namely those codes that have been allocated to the states within the CCAMS area.

The codes are inserted into the Network Manager airspace data system together with a description of how and where a specific code can be used - or not (code restriction).

CCAMS sends compliant and conflict free codes to the ANSPs at a predefined time or on request and ANSP systems correlate SSR code and flight data and present the result to the air traffic control officer who assigns the code.

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

INTENTIONALLY BLANK PAGE

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

4 ROLES OF THE PARTNERS INVOLVED IN THE PROCESS

4.1 ICAO

The International Civil Aviation Organisation (ICAO) maintains the SSR code Management Plan (CMP) for the ICAO European (EUR) Region. The principles and procedures developed in the CMP for the distribution and use of SSR codes are incorporated in the EUR Air Navigation Plan (EUR ANP) publication ICAO Document 7754. On the basis of the above, a detailed list of code allocations in ten defined Participating Areas (PA) covering the EUR Region and certain adjacent is in place. Subsequent editions have been issued as a Supplement the EUR ANP, at half yearly intervals since then.

4.2 European Commission

The European Commission determines the framework through EU Implementing Rules. Two implementing rules have direct impact on CCAMS and are relevant for DNM, namely the ACID Implementing Rule and the Network Manager Implementing Rule. A third one has an indirect influence on CCAMS but a direct influence on ACID: the Surveillance Performance and Interoperability (SPI) Implementing Rule, which determines the requirements in the Surveillance Area and as such the technical enabler requirements for Mode S.

4.3 The Network Manager – Transponder Code Function

The role of the Network Manager is described in EU Implementing rules. This includes, for example, the management of scarce resources but also the Aircraft Identification Program. In Annex III of the Commission Regulation of the Network Management Functions it is stated:

‘SSR transponder codes shall be allocated through the Network Manager to the Member States and the air navigation service providers in a manner that optimises their safe and efficient distribution…’

The Network Manager operates a dedicated Transponder Code Function for the above tasks.

4.4 The Network Manager – CCAMS Office

NM is the technical enabler, providing operational support to the CCAMS community and feedback to the regulatory authorities.

The heart of CCAMS, the CCAMS central server was developed by the Network Manager in-house and integrated into existing technology (ETFMS).

Day-to day operations is managed by a dedicated CCAMS office.

The CCAMS office is in the middle of the process. While it receives the necessary basic information from the SSR code allocation process (the CAL) it is tasked to provide feedback to the regulatory authorities on code usage throughout the network.

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

INTENTIONALLY BLANK PAGE

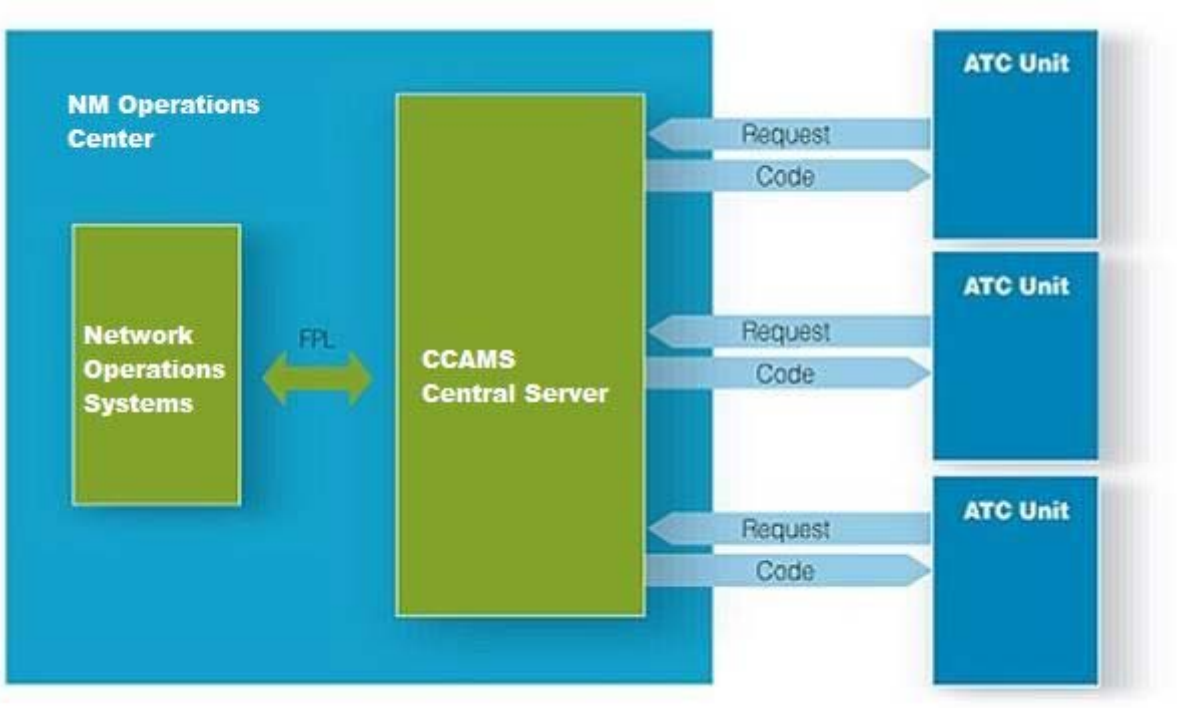
Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

5 How CCAMS Works

CCAMS consists of a central server located in Haren, a secondary unit in Bretigny and a corresponding functionality in participating local FDP systems.

CCAMS will:

- Automatically select and send a code to all the units along the route of the flight, based on the information available from other Network Operations systems;
- Respond to code requests received from ATC units;
- Ensure a code conflict free trajectory of the flight, allowing the retention of this code within the CCAMS area;
- Monitor code use to ensure safe and efficient operations.



5.1 Level of Automation

CCAMS is designed to work fully automated with **no human user input during normal operations.**

Human intervention is necessary in crisis situations (contingency more than 30 minutes) or under special operational circumstances that are communicated beforehand (large events, prolonged outages, etc).

5.2 Operator Input

No operator input under normal operational circumstances is necessary or even possible.

The only direct input into any of the network operations systems can be made into the airspace data system in order to change airspace or SSR code restriction data. This is done at regular, pre-coordinated intervals, i.e. when a country joins the CCAMS area.

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

5.3 Customer Support

There are no specific tools that would allow a quick and easy investigation of operational problems online because the agreed system design and concept does not foresee a helpdesk for real time operational queries. It is therefore not possible to request the network operations room staff to help.

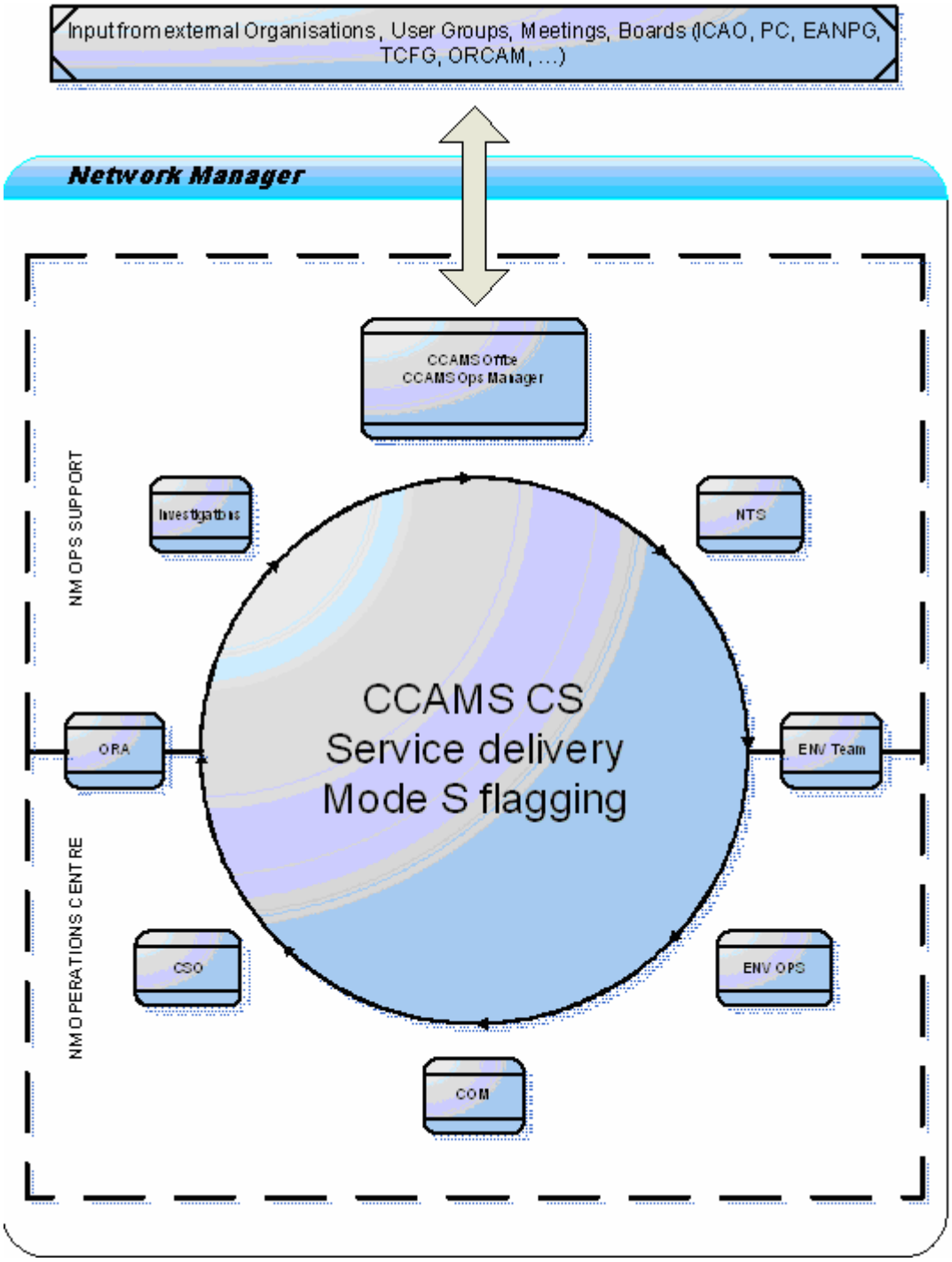
However, the CCAMS office is using the existing tools to monitor the system behaviour on a daily basis and will reply to incidents or queries raised during normal office hours. This suport is extended on specific operationally sensitive days, e.g. new CCAMS member joining.

Moreover, any technical problems will be handled by the Customer technical Service desk & Operations (CSO) in the usual way, 24h/7.

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

6 CCAMS OPERATIONS ORGANISATION

6.1 Actors inside and outside the NM Operations Centre



Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

6.2 Roles and Responsibilities

6.2.1 CCAMS Office

The CCAMS office deals with all operational CCAMS matters. It is manned by 2 CCAMS operations managers working standard office hours.

The CCAMS office is part of a much bigger process (see section 4) and has strong links to the Network Manager transponder code function.

A firm interaction process must be in place to have the network function running as efficient as possible. For this reason some of the interface activities are mentioned below although they might not be performed by the CCAMS office directly.

6.2.1.1 Network Operations Tasks

The CCAMS Operations Manager shall:

- Be the point of contact concerning SSR Code Management for CCAMS states
- Be responsible for the quality and correctness of the Mode 3/A codes lists for the CCAMS central server.
- Be responsible for the quality and correctness of ENV restriction tables for the CCAMS central server.
- Be responsible for the analysis reports of central server performance.
- Carry out investigation of any code conflicts reported or detected in CCAMS airspace to identify causes and necessary actions (in cooperation with the SSR code/ORCAM expert in cases where non-CCAMS states are involved).
- Carry out simulations in order to improve the efficiency of the CCAMS central server.
- Make analysis of non CCAMS states code assignments from CPR data to ensure conflict free operation of CCAMS.
- Make proposals to the ORCAM planning group for code allocation requirements of the CCAMS central server.
- Maintain the operational procedures for CCAMS.
- Carry out post operations analysis of code assignment performance by the central server and non CCAMS states.
- Develop system requirements for modifications or upgrades to the CCAMS central server.

6.2.1.2 SSR Code/ORCAM Management Related Tasks

The following tasks fall under the area of responsibility of the Transponder Code Function. To what extend the CCAMS Operations Manager is directly involved in any of these activities is to be defined. However, the outcome of these activities is relevant for daily operations and as such they need to be known and understood.

The Network Manager transponder code function is responsible to:

- Coordinate the use of Mode 3/A codes throughout the ORCAM area of applicability with the ICAO Regional EUR/NAT office and ORCAM member states.
- Coordinate the use of Mode 3/A codes at the interface to adjacent regions with the respective state or ICAO regional office.
- Attend regular meetings of the SSR code planning group.

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

- Report to ICAO (Regional office/COG/EANPG) on a regular basis
- Monitor the use of the Mode S conspicuity code A1000 in ELS declared airspace in cooperation with the CCAMS Operations Manager.
- Support the CCAMS Operations Manager in providing the Mode 3/A code list for the CCAMS central server.
- Process and analyze requests of states for Mode 3/A codes and subsequently allocate the required amount of codes if justified.
- Process and analyse code conflict reports and propose solutions in case of systematic code conflicts (in cooperation with the CCAMS Operations Manager in cases where CCAMS is involved).
- Provide requirements for modifications of the CAL viewer.

6.2.1.3 Tasks coming from the EU Implementing Rules (Report to Regulator)

This involves management of scarce resources, a NM activity. The CCAMS central server is a technical enabler and together with the rest of the Network operations systems the prime tool for analysis and reporting in the area of code monitoring. The CCAMS office might therefore be called to support activities such as:

- Monitor the use of the Mode S conspicuity code A1000 in ELS declared airspace in cooperation with the DCO SSR code/ORCAM expert.
- Monitor the use of Mode 3/A codes using available means (e.g. CPRs, CCAMS statistics)
- Carry out simulations in order to improve the efficiency of ORCAM SSR code allocation
- Provide support for any other SSR code related issues like processes concerning EC regulation, the Aircraft Identification Program

6.2.2 Role of Network Operations Incident Investigations

Incident investigation has been organised and moved into the system domains. Following this organisation the CCAMS office as the ‘domain manager’ for the CCAMS service shall analyse any operational incident reported via CCMS or email.

When raising an Operations Incident report, the affected system to indicate is ‘CCAMS’.

The results of such investigations shall be reported to the CCAMS office.

6.2.3 Role of ORA (Operational Requirements and Acceptance Section)

Developments and evolutions of the Mode S technology have an impact on CCAMS operations since the distribution of codes within the 3 capabilities might change (e.g. the more flights on Mode S the less Mode 3/A codes are needed, the more of those codes can be freed and used by others). The ORA expert in charge of analysing the impact of Mode S on NM Services and systems stays in close contact with the CCAMS office to inform about the latest developments and actions to be taken.

ORA is also responsible for the user acceptance of new software and re-evaluation of existing, changed software. This includes the operational evaluation of states being candidate for activation.

6.2.4 Role of AD - the Airspace Data Section and Operations Team (Operations and Support)

CCAMS operations is driven by three main environmental elements: the airspace definition, the SSR code restrictions and the unit addressing. The airspace definition defines who is

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

participating, the exact boundaries and some additional parameter. The SSR code restrictions determine which SSR code may be used where and when and for which flight profile/trajectory. The unit addressing determines who is sending/receiving CCAMS messages.

6.2.4.1 Airspace Data Operations Procedures

The implementation and maintenance of CCAMS airspace types and units is integrated in the AD OPS User Manual (ADOU).

The implementation and maintenance of data will follow the normal process of static and dynamic data input in the ENV system, i.e. the static data input follows the existing AIRAC procedures while the dynamic data can be modified by live updates.

Data delivery is done via a submission form integrated in 'Provision of ENV Data'.

The AD supervisor coordinates any changes with the CCAMS office.

A time/process schedule needs to be produced every time a change in static data or restrictions is necessary by the CCAMS office.

6.2.4.2 AD Staffing

AD staff must be trained in the basic principles of CCAMS.

Since the code allocation list (CAL) will be transferred into restrictions, training needs to be provided also for this part of CCAMS. However, the codes are transferred by the CCAMS office. AD staff does not convert the codes into code restrictions.

It shall be possible to introduce live updates of restrictions on operations taking into account the hours of operation of the AD operations team.

Operational evaluation should be done using operational data. It is therefore desired to introduce new data directly into operations if correctness and stability is confirmed.

The period of CCAMS going operational (Feb 2012) is more critical; while it has the biggest impact on the CCAMS office it will also require extended assistance from the operations room. The same applies for integration of new States into CCAMS operations after Feb 2012.

6.2.5 Role of the NM COM – Current OPS Manager

The Current Operations Managers or, during their absence, the Flow Management supervisors, are responsible for proper network systems operations. Under normal circumstances CCAMS operations does not require any manual intervention. However, all abnormal situations have to be handled. The CCAMS concept foresees only technical failures of the CCAMS central server as such possible abnormal case. Furthermore, action of the COM is only required in the event of a complete failure (complete loss of CCAMS service or network).

6.2.5.1 Contingency Process

There are two possible scenarios in which ANSPs would not receive code allocation messages any longer:

- CCAMS CS down on network operations side (may be caused by a component like the ENV system, ETFMS or IFPS)
- Network down (AFTN)

As soon as one of the above is noticed CCAMS Status "Yellow' is in force.

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

The NMOC sends out an AIM (template CCAMS LEVEL YELLOW in AIM tool) to share the information about the outage (if it could be noticed on their side). At the same time this message can serve as pre-warning for a possible escalation to level 'RED'.

During status Yellow ANSPs assign local codes. Continuity is therefore initially ensured on local level and no intervention is required. How long the local code pool lasts in the various ANSPs depends on the traffic volume during the time of day and the amount of codes in the pool.

If it is clear that the problem cannot be solved within a reasonable time, meaning before an ANSP runs out of local codes, the COM/FM Supervisor may decide CCAMS level RED. This means a roll-back of all CCAMS participating units to ORCAM (the method that is used before CCAMS deployment).

An AIM and an email is sent (template CCAMS LEVEL RED in AIM tool) to the CCAMS units to disable CCAMS and enable the SSR code pool that is defined for level RED – the 'RED codes'- immediately. Those RED codes are pre-defined in agreement with all ANSPs and in coordination with ICAO and stored in the local systems. The RED codes list is also part of the CCAMS Contingency Plan and is updated on a regular basis.

As soon as the problem is fixed a switch-back to CCAMS needs to be announced by the COM via AIM and email (template CCAMS RESTART NOTIFICATION in AIM tool and in the Draft folder of the COM PC). CCAMS units send a confirmation.

After CCAMS has been re-started in the network operations room, the RED Codes are disabled in the CCAMS units, and SSR codes are received from CCAMS again. This marks normal operations and the end of Status 'RED'.

6.2.5.2 CCAMS Contingency Procedure

The detailed CCAMS contingency scenarios for all actors are described in the CCAMS contingency plan, attached in Annex 1.

The specific procedure for the NMOC current ops manager or flow management supervisor is also described in detail in Annex 1.

Following the process described above in 6.2.5.1 the series of events can be summarised as follows:

- Failure of CCAMS System or communications network across the whole area detected
- Trigger immediate technical intervention (CSO, LSE), this would be
  - Restart ETFMS
  - If not successful switch to secondary CCAMS unit in Bretigny
  - If not successful recommend level RED to COM
- In the meantime, send out an AIM to all CCAMS states to inform about the outage (template CCAMS LEVEL YELLOW in AIM tool)
- Analyse severity and estimated duration of outage
- If problem can be solved within reasonable time (as above: restart or switch) wait for fix
  - back to normal operations, send AIM (template CCAMS BACK TO NORMAL)
- If problem cannot be solved **within 30 minutes** declare status Red.
- Send AIM (template CCAMS LEVEL RED)
- Send email, ANSPs must confirm reception
- Monitor confirmations and phone ANSPs that have not confirmed
- ANSPs start assigning Red Codes immediately after notification
- Analyse possible switch-back date/time
- Send AIM and email with switch-back date/time to all partners involved
- Monitor confirmations and phone ANSPs that have not confirmed
- Re-start CCAMS central server before announced switch-back time to verify Ops state
- CCAMS units switch-back at agreed date/time

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

- At successful recovery status back to normal operations

6.2.5.3 Disaster Recovery Plan

The disaster recovery plan deals with catastrophic site contingency, e.g. when the whole building is destroyed. In such case the above CCAMS Contingency Procedure would not be executable in Haren.

Predicting a contingency scenario under disastrous circumstances is impossible but as a procedure the following is added to the Plan:

- Switch CCAMS to secondary unit (Bretigny) immediatedly (together with IFPS)
- If CCAMS is operating normal then no action
- If CCAMS is not operating normal then the IFPU2 supervisor or Contingency responsible person declares level RED immediately via AIM. No email and confirmation required.
- Recovery is decided at management level.

6.2.6 Role of NTS - Network Technical Systems

NTS is responsible for the proper technical state of the system, system monitoring, system upgrade and technical exploitation.

CCAMS is a NM development and change management for future developments stays with the NM.

Any changes to CCAMS are properly requested through Change Requests filed by the CCAMS office. They then follow the normal software development life cycle of a NM release.

6.2.7 Customer technical Service desk & Operations (CSO) – System Monitoring

CSO performs system monitoring and maintenance activities. Any technical problem needs to be addressed to the via the dedicated helpdesk

TECHNICAL PROBLEMS (Transmission, Terminals)

Contact the CSO HELPDESK

TELEPHONE +32 (0) 2 745.19.97

FAX +32 (0) 2 729.90.23

mailto: nm.cso.help-desk@eurocontrol.int

CSO is executing the SOP/SOG procedures in case of technical failures. CSO also executes specific actions in case of a real disaster on site.

CSO informs the COM in case of serious technical failures that would result in a loss of service for more than 30 minutes. CSO will then try to restart CCAMS. If that fails a switchover to the secondary unit in Bretigny is initiated. Failure of this action would trigger that the COM declares status ‘RED’ as described in the CCAMS contingency scenario.

Process

The System Operations Guide specifies what measures are to be taken after a problem has been detected.

In the event of a complete outage of CCAMS the series of events would be

- Restart ETFMS, and if that does not solve the problem
- Switch to and activate CCAMS secondary unit in Bretigny, and if that does not solve the problem
- Inform the COM and recommend Level RED

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

Procedures

The procedures to be followed by CSO are specified in the corresponding SOP and SOG and in the disaster recovery plan.

Recovery

During CCAMS level RED and after successful repair of the problem, both CCAMS instances (primary and secondary) will be set to 'not responsible'. **Before** the coordinated switch-back date/time (communicated by the COM) one instance will be set to 'responsible', normally the primary unit in Haren. With that CCAMS re-starts operations and it can be verified that the system has been successfully repaired (and does not fail at restart). After that CCAMS units switch from level RED to CCAMS.

6.2.8 Post Operations Management

Post operations management is carried out by the CCAMS office.

Specific system reports are generated on a daily basis. They are sent to the CCAMS office for analysis. Together with received incident reports the CCAMS office makes an assessment on the operational status of the central server or associated applications. Corrective actions are initiated for any detected problem.

6.3 Documentation

This manual can be found on the official documentation drive of the Network Manager.
http://www.eurocontrol.int/lists/publications/network-operations-library

This documentation is on free access for consultation.

6.4 Contact List

The following list gives the point of contact for the internal participants with their scope of activity:

Service	Contact	Address e-mail	Phone	Scope
CCAMS Office	Niema De Grauwe	niema.de-grauwe@eurocontrol.int	+32 2 729 1144	CCAMS Operations Manager
CCAMS Office	Armin Schawe	armin.schawe@eurocontrol.int	+32 2 729 9877	CCAMS Operations Manager
Customer technical Service desk and Operations	CSO Helpdesk	nm.cso.help-desk@eurocontrol.int	+32 2 745 1997	Technical problems
NMOC	Current Operations Manager	nm.current.ops.manager @eurocontrol.int	+32 2 745 1931	Network + Contingency
DNM NTS	Philippe Waroquiers	philippe.waroquiers@eurocontrol.int	+32 2 729 9735	CCAMS CS Development
DNM ACID	Sorin Muresean	sorin.muresean@eurocontrol.int	+32 2 729 3166	ACID Program Manager

Important note: Any external query concerning CCAMS service shall be transferred to the CCAMS office.

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

6.5 Processes and Workflows

The CCAMS operations shall not overrule the mandates already in place concerning network operations.

If the helpdesk is contacted the call can be transferred to the CCAMS office during normal office hours. Else an incident report needs to be submitted by the caller.

Important note:	The commonly agreed CCAMS system design and operational concept does not foresee a helpdesk function in the network operations room for operational problems on ANSP side. These shall be solved locally, i.e. by the ANSP. The only exception is of course a technical failure on CCAMS central server side.

6.6 Treatment of Incidents

The treatment of operational incidents follows the already existing workflow.

All internal parties involved shall report incidents via the CCMS.

All external parties shall report incidents via the CCMS Web when accessible or via the email address **nm.incident@eurocontrol.int**

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

7 ACCESSING CCAMS CENTRAL SERVER INFORMATION

The CCAMS central server, the SSR code allocation mechanism and messages exchange cannot be accessed via a dedicated CCAMS interface. The concept of fully automated processing does not foresee human intervention or input.

However, with CCAMS being part of ETFMS, the usual standard ETFMS interfaces can be used to view some limited information CCAMS generates or information on what happened during the lifecycle of a flight.

Examples:

- **Flight list**

  CCAMS information is displayed in the ETFMS flight list per flight whenever the option 'CCAMS Info' is activated.

- **Flight Data display**

  CCAMS information is displayed in the flight data display for a flight.

- **Flight Profile display**

  In the profile information screen the applied ssr code restrictions for a flight model can be displayed.

- **Query display CCAMS Area description**

  By using the standard query the detailed description of the CCAMS area can be displayed (also on the map).

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

INTENTIONALLY BLANK PAGE

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

8 EXTERNAL COMMUNICATIONS

8.1 Messages Exchange

Messages exchange is fully automatic. In principle there are four main messages :

- **COR (Code Request)**

  A COR is sent by an ANSP if an SSR code is needed for a specific flight that is expected in their area of responsibility.

- **CAM (Code Assignment Message)**

  The CAM is the response of the CCAMS central server to a COR and transmits the SSR code that CCAMS assigns to the specific flight.

  For certain flights a CAM is sent without COR request, e.g. for departures. Here an ANSP may specify to allocate an SSR code automatically at a certain time before departure.

- **CRE (Code Release Message)**

  The CRE message is used by an ATS Unit to inform CCAMS that a CCAMS code is no longer required by the flight concerned.

- **CCM (Code Cancellation Message)**

  CCAMS will send a Code Cancellation Message (CCM) when it needs to inform an ATS Unit that the specified flight does not need a code for the time being/any longer, e.g. a flight for which a DLA message is received, delaying the flight by more than 1 hour.

  In addition, and to be complete, there are optional messages:

- **ERRor and WARning Messages**

  CCAMS may receive ERRor and WARning messages from ATS Units in reply to the sent CCAMS messages. Just like for the other DNM systems, CCAMS shall record the received ERR and WAR messages in the event log file for operational evaluation, incident analysis and production of statistics.

8.2 External Phone Calls Received

Any external query concerning the CCAMS service shall be transferred to the CCAMS office.

The Network Manager Operations Center staff will not be in a position to answer questions concerning CCAMS because the nature of the system – CCAMS is a fully automated system running as component of the ETFMS system. Due to the short term, real time nature of the CCAMS code assignment, problems needs to be solved locally (i.e. assignment of local codes), but if there are problems in the ssr code restrictions of a new airac cycle, we have on-line tools to look/investigate.

Analysis tools are available in the CCAMS office but they are based on recorded/stored data so that the assessment of a certain problem can only be done post-operations.

Regarding technical problems (and this should really be the vast majority amongst the incidents), CSO is dealing with them just like for all other NM services.

TECHNICAL PROBLEMS (Transmission, Terminals)
Contact the CSO HELPDESK
TELEPHONE ++32 (0) 2 745.19.97 FAX ++32 (0) 2 729.90.23
mailto: nm.cso.help-desk@eurocontrol.int

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

Below is a list of frequently asked questions and the actions they would trigger. This list will grow in time based on user feedback.

Problem	Possible Causes	Action
Helpdesk is called that code for a specific flight was not received	Can have several reasons like network delay, no flight plan data, etc	If at a certain time the SSR code for a flight is not received, a local code is allocated by the local system.
Helpdesk is called that SSR codes for several flights in a row have not been received	Network delay, technical problems on local or central server side	Transfer call to CSO to see if there is a technical reason for delayed messaging on DNM side
Helpdesk is called and asked for an SSR code that can be assigned for a flight		SSR codes are assigned fully automatically following a complex logic based on internationally agreed procedures. Caller must send a COR message (code Request).
Helpdesk is called and additional local codes are requested.	Running low on local codes	The amount of local codes cannot be changed ad-hoc, it is subject to procedures. Transfer to CCAMS office.
MFD creates reference in the flight list. Helpdesk is called to deleted this reference **OR** **There are two references for the same callsign in the flight list (looks like two flights with the same callsign)**	**An MFD is created when an SSR code is requested by ATC and this code request cannot be associated to existing flight data, e.g. we have no flight plan (only one reference is created – the MFD) or the flight plan is not up to date (two references – the MFD and the outdated flight data)**	**If caused by MFD (indicated by an 'M' as first or last letter in the column 'Kind' (kind of flight), the MFD shall be ignored, it is ATC related information. MFD is not subject to route charges and it is not a flight plan. An MFD cannot be deleted.** **An MFD can only be changed by updating the flight information, e.g. APL.**

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

9 MAINTENANCE

Internal

CCAMS is a component of the ETFMS system. Maintenance work is therefore done during the periodical TACT maintenance windows as agreed and communicated by the OCCB (Operational Change Control Board) to everybody involved in the operations and operations support areas.

CCAMS has a backup unit in Bretigny. During a maintenance window the responsibility is switched to the other unit and afterwards back. **Although n**o major operational impact is **allowed**, some minor impact might be a messages delay when they are on hold during the switch. **Any planned maintanance activity shall be communicated to the CCAMS units.**

External

Maintenance activities on the external systems might impact CCAMS operations from a network point of view. It shall not impact the network operations systems. The CCAMS office establishes a maintenance schedule and looks for possible extra measures to keep the impact to a minimum.
Any planned maintanance activity shall be communicated to the CCAMS office.

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

INTENTIONALLY BLANK PAGE

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

10 AFTN NETWORK PROBLEMS

CCAMS messages exchange is done via AFTN.

AFTN outages occur frequently and can be of long duration, sometimes even several hours.

This is a risk for the receiving units since they might not be able to receive CAM messages. During the CCAMS user group it was decided that ANSPs would use the OpLog information provided by the network manager via the CHMI to allocate some of the SSR codes manually.

For completeness, a detailed description on how to derive CCAMS codes from the CHMI is given in Annex 2.

A second possibility is to retrieve the SSR code from the flight list in the NOP Portal. Due to the easier access through any computer with internet connection the information can be retrieved without a dedicated workstation installed. However, the flight list needs to be updated regularily to always display the most up-to-date SSR code.

In any case, AFTN outages are out of control of the Network Manager and there is no way to influence nor solve critical situations. Problems occurring during AFTN outages can only be solved locally.

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

INTENTIONALLY BLANK PAGE

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

11 ANNEX 1 CONTINGENCY

11.1 CCAMS Contingency Plan

The CCAMS contingency plan can be downloaded from the CCAMS One Sky Teams space. From within EUROCONTROL it can be accessed here:

CCAMS Contingency

11.2 CCAMS Contingency – procedures for the NM Operations Center

11.2.1 Event 1 - Level YELLOW

Failure of CCAMS System or communications network across the whole area detected

Description

The ONLY failure the network operations room is called to deal with is a total loss of service during a long period of time affecting all CCAMS units in a way that there is a real network effect. This does not include a failure caused for or in a single CCAMS unit or even several as long as the overall network is still sufficiently enough covered. In those cases the problems are solved locally.

Possible causes can be an outage of one of the network operations elements like ETFMS, the CCAMS central server, the environment data system, IFPS or similar. It might also be a long term outage of the communication network (Ang1 or AFTN).

Actions

- Find out what the problem is. If not already done CSO needs to be alarmed to trigger immediate technical intervention (CSO, LSE)
- Send out an AIM (template CCAMS LEVEL YELLOW) to all CCAMS states to inform about the outage

Description

All CCAMS units must be informed about the outage asap since not receiving SSR Codes from the CCAMS central server will automatically trigger level YELLOW on ANSP side. This message serves also as pre-warning for a possible escalation to level RED and should already alert the responsible technical departments.

During level YELLOW local codes are assigned by the CCAMS units. There are sufficient local codes available for a period of time depending on the volume of traffic at the time of the day. As an indication, in a busy ATC center at peak traffic time the local codes will last less than 30 minutes. It is therefore agreed with the CCAMS unit that a level YELLOW phase does not exceed 30 minutes significantly.

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

The following AIM is sent to the pre-set addresses (this is stored as template CCAMS LEVEL YELLOW in AIM) :

```
CCAMS LEVEL YELLOW
----------------------------------

SUBJECT: CCAMS OPERATIONS INTERRUPTED

ATTENTION: THIS MESSAGE DOES NOT DECLARE CCAMS LEVEL RED

CCAMS OPERATIONS IS CURRENTLY INTERRUPTED.

MEASURES ARE TAKEN TO RESTART FULL OPERATIONS IMMEDIATELY.
SHOULD THOSE ATTEMPTS FAIL PLEASE BE ADVISED THAT LEVEL RED MIGHT BE
DECLARED. IN THIS CASE YOU WILL RECEIVE ANOTHER AIM (AS DESCRIBED IN THE
CCAMS CONTINGENCY PLAN).

NM OPERATIONS CENTRE - BRUSSELS
```

- Analyse severity and estimated duration of outage to decide on further steps

Description

CCAMS units will sooner or later run out of SSR codes when their pool of local codes is used up. Before this can happen a decision is needed to either wait for the fix or escalate to level RED.

- **IF** problem is known and can be solved within acceptable time wait for fix

Description

The time one can allow to wait for a fix is determined by the level of network disruption to be expected at the time of the day. Escalating to level RED will solve problems for the long term but causes code conflicts at switch-over and recovery (since at that moment two different sets of code allocation lists are overlapping and flights already in the air might use a code to be allocated again under level RED rules).

As soon as the problem is fixed send an AIM to inform about normal operations (template CCAMS back to normal in AIM)

```
CCAMS BACK TO NORMAL
----------------------------------------

SUBJECT: CCAMS OPERATIONS RESUMED

CCAMS ISSUES HAVE BEEN SOLVED. THE SYSTEM IS BACK TO FULL OPERATIONS.

NM OPERATIONS CENTRE - BRUSSELS
```

- **ELSE** As soon as a technical problem on network operations side is detected the SOP/SOG procedures are executed by CSO. Those procedures will either fix the problem or lead to declaration of level RED.

  Description

  The events taking place are as follows:

  o Try to re-start ETFMS
    - Success: resume operations

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

- Fail: Switch CCAMS to secondary unit in Bretigny
  - Success: resume operations
  - Fail: Declare CCAMS Level RED
- Inform the COM or FM Supervisor that level RED needs to be declared

11.2.2 Event 2 – level RED

Failure of CCAMS System or communications network across the whole area detected and problem cannot be solved within acceptable time – contingency level RED is decided

Description

If the existing problem cannot be solved quickly and the risk of network disruptions becomes too big contincency level RED is declared.

CCAMS units will revert from the centralised code assignment to local ORCAM code assignment as soon as the notification messages (AIM and email) sent by the NMOC Current Operations Manager have been received. ANSPs will switch from CCAMS codes to RED codes, a pre-defined set of SSR codes stored in their system. In simple terms the RED codes are the code pool of CCAMS fed back into the various local systems for local assignment.

Due to a temporary double usage of some codes at switch-over and recovery **code conflicts will occur**.

Actions

- COM to send AIM (template CCAMS LEVEL RED) and email (CCAMS LEVEL RED DECLARED - stored in the Draft folder of the Current Operations Managers PC)
- Monitor confirmations and phone ANSPs that have not confirmed

  #### Description

  An AIM (template CCAMS LEVEL RED in AIM) and an email (CCAMS LEVEL RED DECLARED - stored in Draft folder on the PC of the COM) are sent to predefined adresses to inform about immediate switch to level RED. Not all AIM terminals are permanently monitored hence the additional email.

  A confirmation message is sent by the supervisors of the CCAMS unit. If no confirmation is received network operations makes contact via telephone.

  The following AIM is sent:

```
CCAMS LEVEL RED
----------------------------
SUBJECT: CCAMS OPERATIONS – LEVEL RED

CCAMS CENTRAL SERVER OPERATIONS IS INTERRUPTED AND CANNOT BE RESTORED AT
SHORT TERM.

CCAMS CONTINGENCY LEVEL RED IS DECLARED
========================================

ALL CCAMS UNITS SHALL ACTIVATE THE POOL OF RED CODES IMMEDIATELY.

ALL CCAMS UNITS ARE REQUESTED TO CONFIRM RECEPTION OF THIS MESSAGE BY EMAIL
TO :  NM.CURRENT.OPS.MANAGER@EUROCONTROL.INT

DATE AND TIME OF RESTART OF CCAMS OPERATIONS WILL BE ANNOUNCED BY AIM AND
EMAIL.

NM  OPERATIONS CENTRE – BRUSSELS
```


Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

The following email is sent **(this email is stored in the Draft folder on the PC of the COM)**:

From: NM Current OPS Manager
Sent: Friday 18 November 2011 13:27
To: <Participating CCAMS Units> ---> updated by CCAMS Office regularly
Subject: CCAMS LEVEL RED ACTIVATED

NM Operations Centre Information Message

CCAMS Central Server operations is interrupted and cannot be restored at short term.

CCAMS Contingency level RED is declared

All CCAMS Units shall activate their pool of RED codes immediately.

All CCAMS Units are requested to confirm the reception of this message by Reply to All

Date and time of CCAMS restart into operations will be announced by AIM and email.

Current Operations Manager
NM Operations Centre
Tel: +32 2 745 19 31
Fax: +32 2 729 9027
E-mail: nm.current.ops.manager@eurocontrol.int

EUROCONTROL
96 Rue de la Fusée
B - 1130 Brussels
www.eurocontrol.int

- At the agreed time ANSPs start assigning Red Codes

  Description

  The RED Codes are agreed and pre-defined SSR Codes stored in the CCAMS units but disabled (they are more or less the same as under ORCAM rules).

  Following the announcements in the AIM and email the CCAMS units switch from CCAMS to Red codes. From that moment on switch-over to level RED is completed.

- Analyse earliest possible switch-back date/time

  Description

  A switch-back to CCAMS operations after the problem is fixed cannot be done at any time of the day. Yet it shall be as early as possible.

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

Simulations show that the best time for a switch-back is at 00:30. This time shows the lowest amount of traffic and also eliminates miscalculations around midnight with old/new day timings. This time shall be first choice. If further extended, the window for a switch back in reasonable low conditions is from 23:00 to 03:00. At that time period a CCAMS restart has the least impact on the network.

The CCAMS user group (CUG 12 meeting) concluded that the COM is deciding on CCAMS re-start date/time without having to find agreement by the CCAMS units.

The COM will look for the next, best time to restart. Taking into account the above mentioned time window it was understood that the level RED period can be many hours.

- Notify all CCAMS units about the date and time of the intended CCAMS re-start of operations and get confirmation

  Description

  Once decided by the COM, the date and time of the re-start is communicated to all CCAMS units via AIM (template CCAMS RESTART NOTIFICATION) and email (message CCAMS RESTART NOTIFICATION in Draft folder of the PC of the COM).

  A confirmation must be sent by the CCAMS units. In case no confirmation is received for a unit the COM makes contact by phone to ensure that all CCAMS units are aware of the time to switch back to CCAMS operations.

  The following AIM is sent:

CCAMS RESTART NOTIFICATION

SUBJECT: CCAMS RESTART

CCAMS CENTRAL SERVER OPERATIONS WILL BE RESTARTED ON

<DD MMM YYYY> AT <HH:MM>

ALL CCAMS UNITS SHALL DE-ACTIVATE THE POOL OF RED CODES AND SWITCH BACK TO CCAMS AT THE ABOVE DATE/TIME.

ALL CCAMS UNITS ARE REQUESTED TO CONFIRM RECEPTION OF THIS MESSAGE BY EMAIL TO : **NM**.CURRENT.OPS.MANAGER@EUROCONTROL.INT

NM OPERATIONS CENTRE – BRUSSELS

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

The following email is sent

From: **NM** Current OPS Manager
Sent: Friday 18 November 2011 13:27
To: <Participating CCAMS Units> ---> updated by CCAMS Office regularly
Subject: CCAMS RESTART NOTIFICATION

NM Operations Centre Information Message

CCAMS Central Server operations is restarted on

<DD MMM YYYY> AT <HH:MM>

All CCAMS Units shall de-activate their pool of RED codes and switch to CCAMS at the above date/time.

All CCAMS Units are requested to confirm the reception of this message by Reply to All.

Current Operations Manager
NM Operations Centre
Tel: +32 2 745 19 31
Fax: +32 2 729 9027
E-mail: nm.current.ops.manager@eurocontrol.int

EUROCONTROL
96 Rue de la Fusée
B - 1130 Brussels
www.eurocontrol.int

Re-Start CCAMS Central Server **before** announced date/time (check that problems are fixed)

Description

During CCAMS level RED and after repair of the problem, both CCAMS instances (primary and secondary) will be set to 'not responsible'.

A few minutes before the announced switch-back date/time one instance will be set to 'responsible', normally the primary unit in Haren. With that CCAMS starts operating. We will send messages to the CCAMS units at that time to see that the CCAMS Central Server is working correctly. Since the CCAMS units have not switched from level RED to CCAMS, those messages will be discarded on their side. The reason for this procedure is to ensure that CCAMS is fully repaired before we lift level RED. We do not want to go straight back to level RED only because there is still a problem existing that was not detected.

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

- CCAMS units switch back to CCAMS

  Description

  On ANSP side the assignment of RED codes is de-activated and the reception of CCAMS messages activated at the announced date/time.

  The system is monitored for correct recovery and operations.

- At successful recovery status back to normal operations.

  Description

  Contingency level RED is terminated with successful recovery and normal operations.

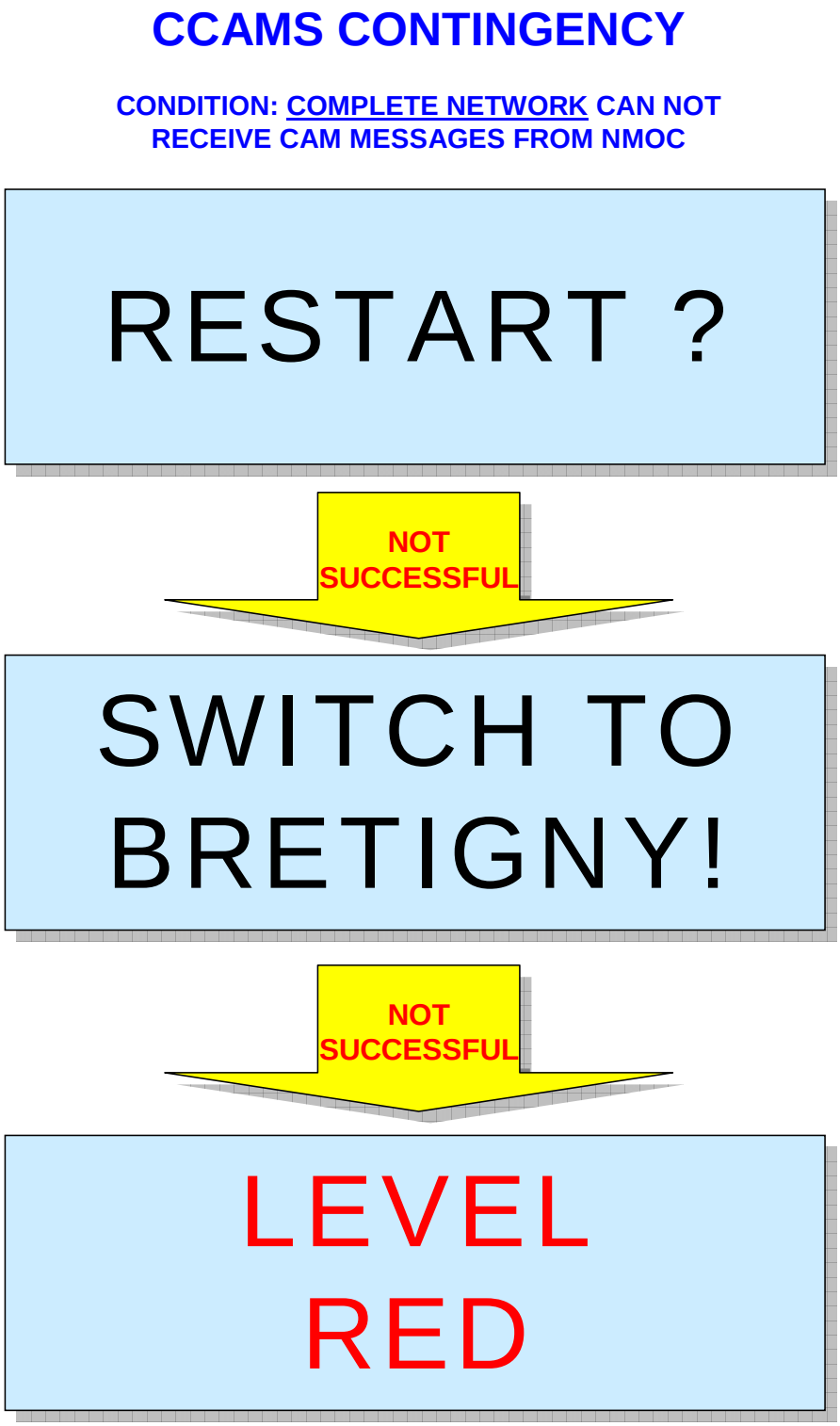
AIM and email addresses

AIMs and emails are sent to pre-defined addresses as communicated in the switchover plan.

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

11.2.3 CCAMS Contingency in NMOC

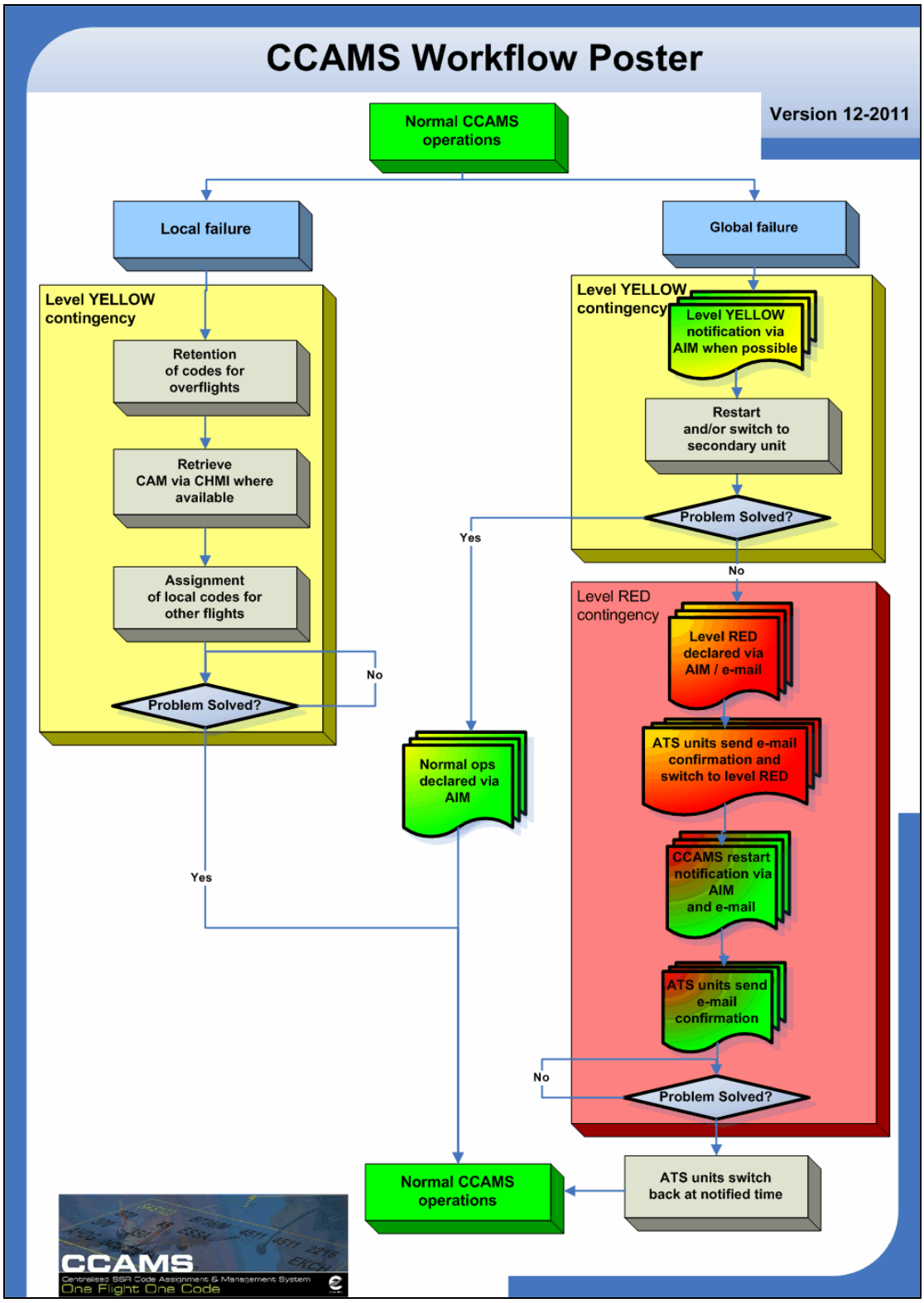
Whenever a CCAMS malefunction is detected NMOC is executing this simplified procedure



Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

11.2.4 Global CCAMS contingency workflow diagram

The following diagram shows the workflow during level Yellow and RED. It is devided into local failure (a local problem on ATSS side, isolated) or global failure (complete network).



Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

11.2.5 Event 3 – Site Disaster

Description

The NM disaster recovery plan explains the procedures under catastrophic site contingency situations in Haren, e.g. when the whole building is destroyed. In such case the above CCAMS Contingency Procedure would not be executable in Haren.

Predicting a contingency scenario under disastrous circumstances is impossible but as a procedure the following is added to the Plan:

Actions

- Switch CCAMS to secondary unit (Bretigny) immediately (together with IFPS)
- If CSO is present and able to confirm that CCAMS is operating normal then no action
- If CSO is not present or cannot guarantee that CAMS is operating normal then the IFPU2 supervisor or Contingency responsible person declares level RED immediately via AIM (template CCAMS LEVEL RED in AIM). Email and confirmation are optional.
- Recovery is decided at management level following the disaster recovery plan.

CCAMS LEVEL RED

SUBJECT: CCAMS OPERATIONS – LEVEL RED

CCAMS CENTRAL SERVER OPERATIONS IS INTERRUPTED AND CANNOT BE RESTORED AT SHORT TERM.

CCAMS CONTINGENCY LEVEL RED IS DECLARED
==========

ALL CCAMS UNITS SHALL ACTIVATE THE POOL OF RED CODES IMMEDIATELY.

ALL CCAMS UNITS ARE REQUESTED TO CONFIRM RECEPTION OF THIS MESSAGE BY EMAIL TO : **NM**.CURRENT.OPS.MANAGER@EUROCONTROL.INT

DATE AND TIME OF RESTART OF CCAMS OPERATIONS WILL BE ANNOUNCED BY AIM AND EMAIL.

NM OPERATIONSCENTRE – BRUSSELS

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

12 ANNEX 2 RETRIEVE SSR CODES FROM THE CHMI OR NOP PORTAL

12.1 Access CCAMS Information via the CHMI Operational Log

Whenever we experience an AFTN node failure no CAM message will arrive at ANSP side and no COR can be sent by them.

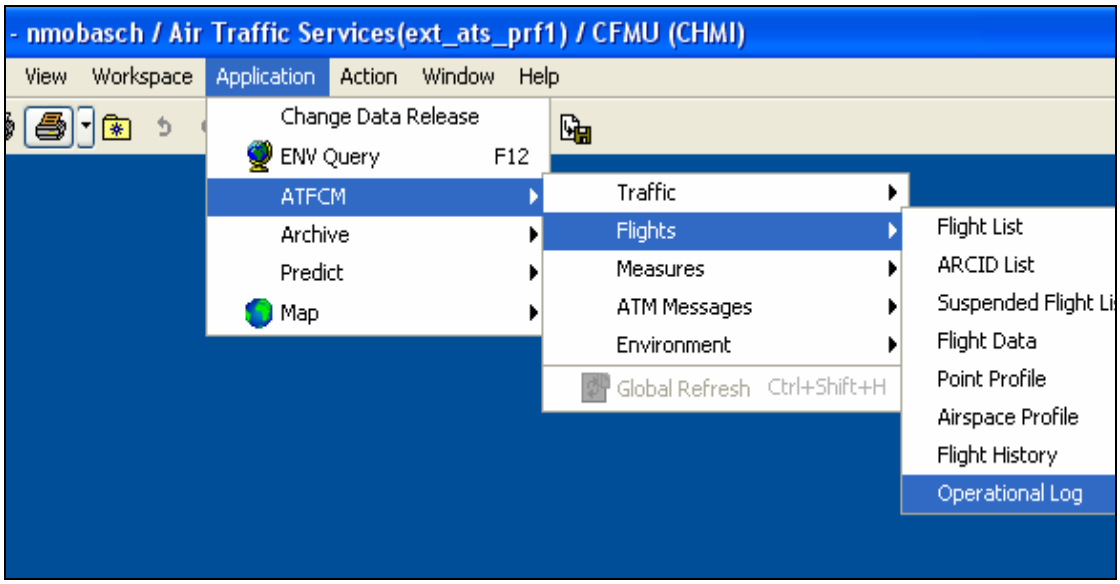
As a fallback procedure the CAM that was sent but is held up somewhere can be displayed in the CHMI **or NOP Portal.**

12.2 Procedure to retrieve SSR code information from the CHMI

12.2.1 CHMI Window Setup

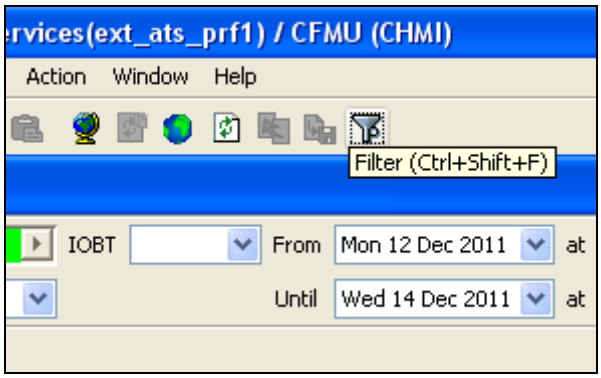
The setup has to be done only once, after that it is re-used for each flight (only if the window was closed the setup needs to be re-done).

- Select Operational log in the Flights menu.



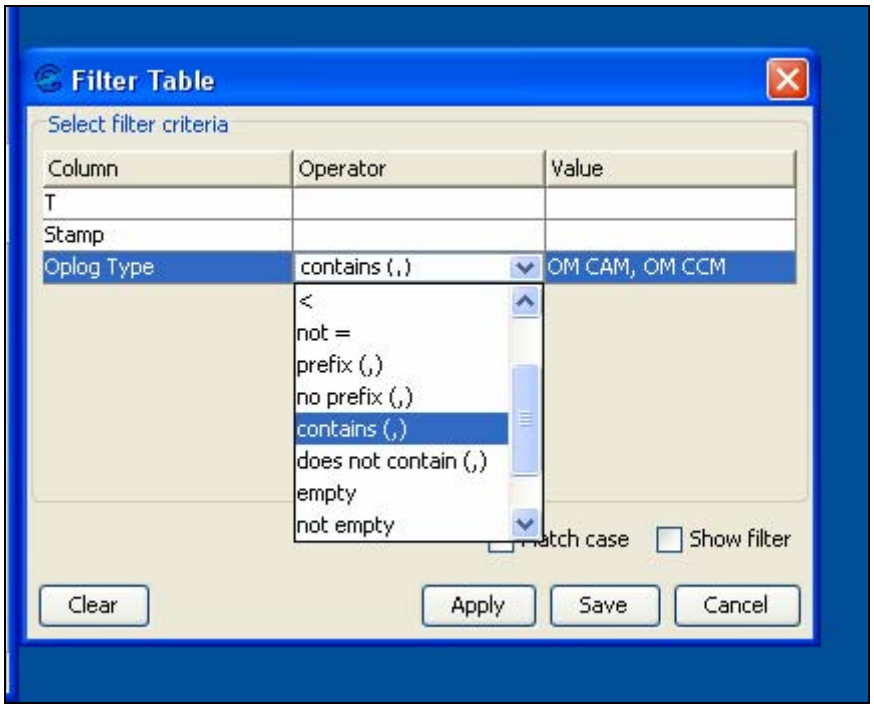
12.2.2 Filter and Select CAM and CCM Messages (only display those two types of messages)

- Select Filter from the top buttons (right one)



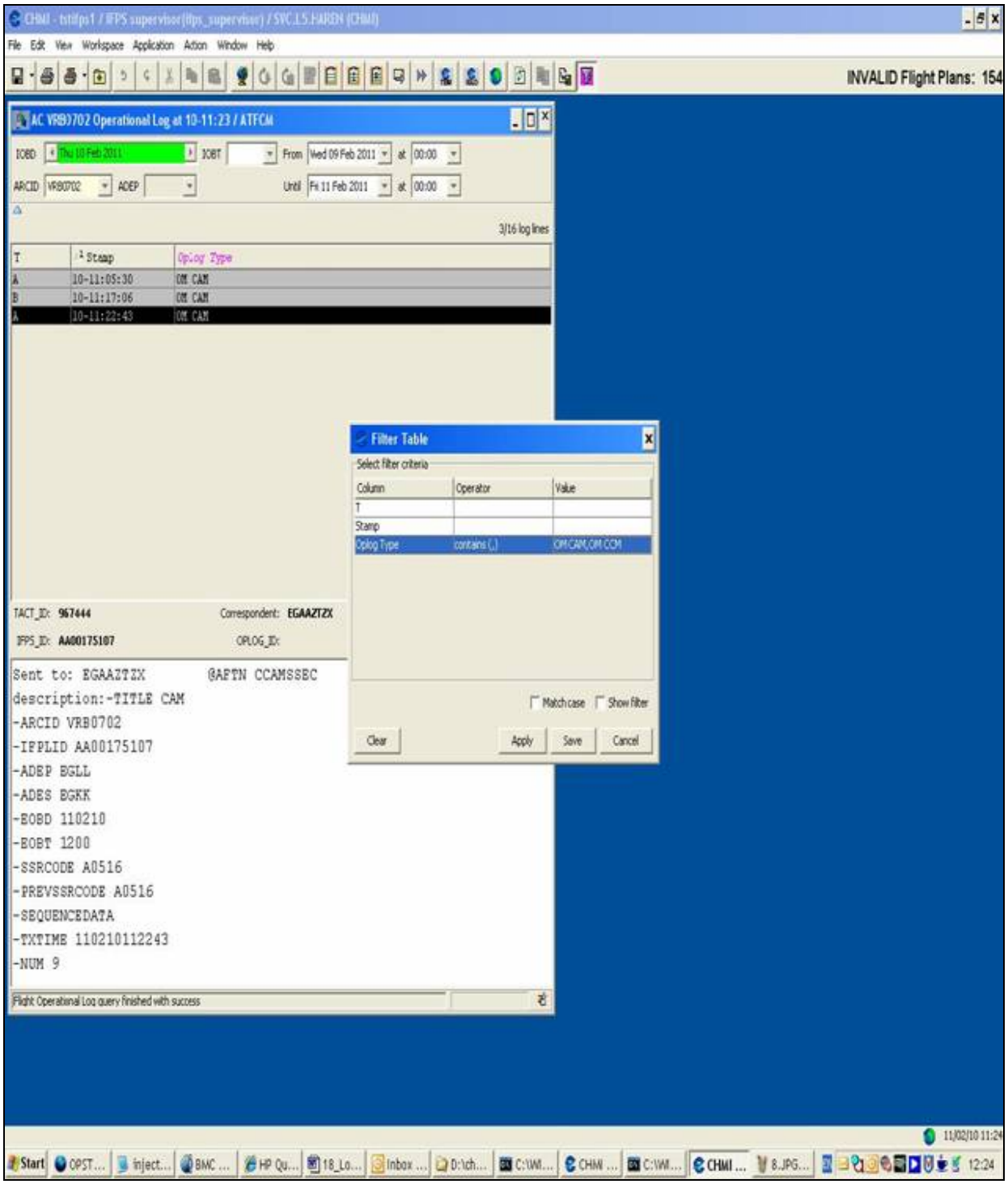
Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

- In the Filter Table enter:
    - Oplog Type Operator: contains (,)
    - Oplog Type Value: OM CAM, OM CCM



- Apply Filter (once the Filter is applied the set-up is completed, e.g. it does not need to be re-introduced for each flight query explained in the next 3 steps) and Save
- Type ARCID
- Enter
- Select most recent CAM

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)



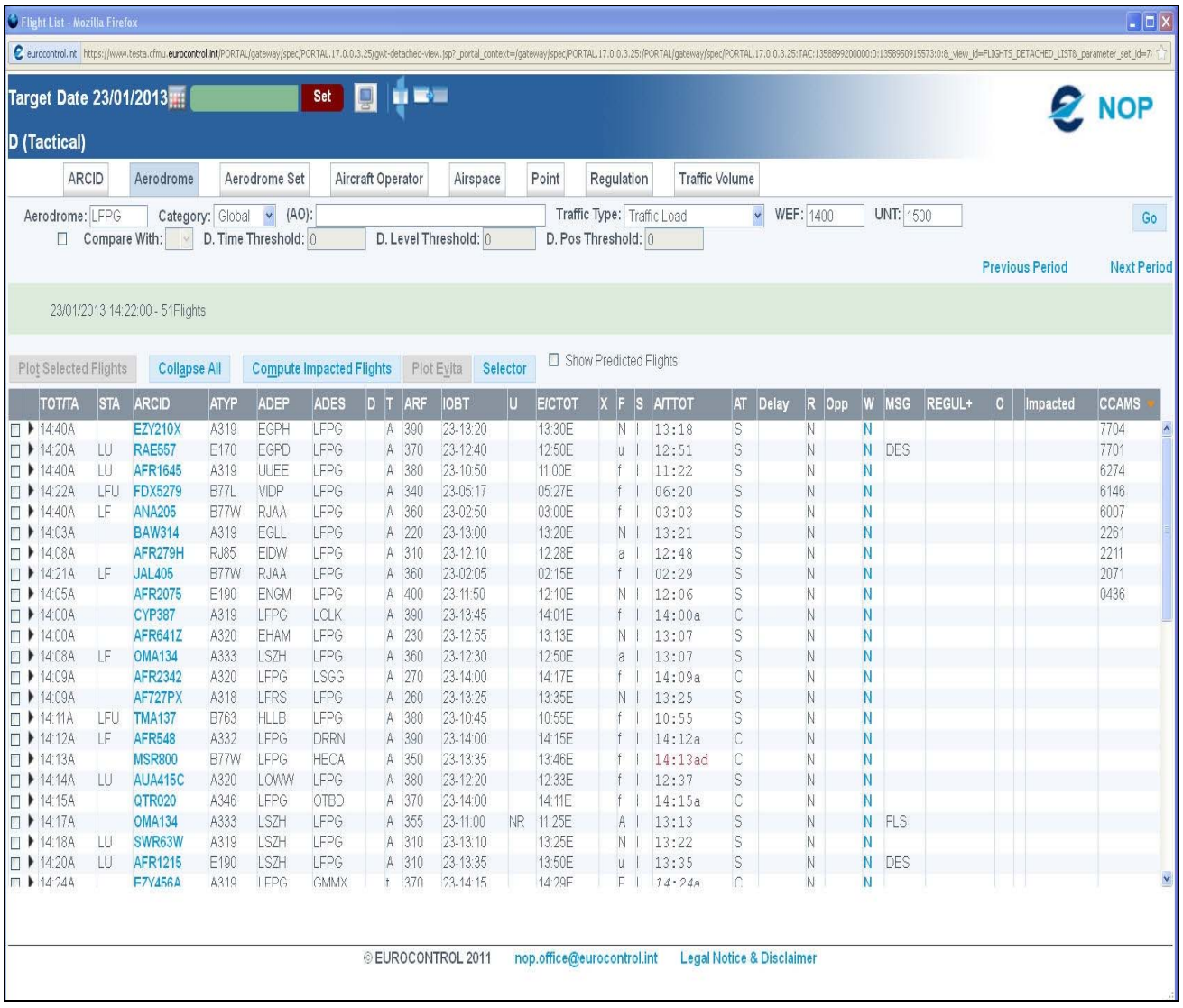
Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)

12.3 Retrieve SSR code from the NOP Portal

In addition to the above procedure of retriving SSR code information from the CHMI, the same information can now also be found in the NOP Portal.

The information is stored in the flight list under the heading CCAMS.

Note: If an SSR code is changed the flight list is not automatically updated. In order to always have the most updated information it is advised to refresh the flight list regularily.


Flight List - Mozilla Firefox
Target Date 23/01/2013
Set
NOP
D (Tactical)
ARCID
Aerodrome
Aerodrome Set
Aircraft Operator
Airspace
Point
Regulation
Traffic Volume
Aerodrome: LFPG
Category: Global
(AO):
Traffic Type: Traffic Load
WEF: 1400
UNT: 1500
Go
Compare With:
D. Time Threshold: 0
D. Level Threshold: 0
D. Pos Threshold: 0
Previous Period
Next Period
23/01/2013 14:22:00 - 51Flights
Plot Selected Flights
Collapse All
Compute Impacted Flights
Plot Evita
Selector
Show Predicted Flights
TOT/TA STA ARCID ATYP ADEP ADES D T ARF IOBT U E/CTOT X F S A/TTOT AT Delay R Opp W MSG REGUL+ O Impacted CCAMS
14:40A EZY210X A319 EGPH LFPG A 390 23-13:20 13:30E N I 13:18 S N N 7704
14:20A LU RAE557 E170 EGPD LFPG A 370 23-12:40 12:50E u I 12:51 S N N DES 7701
14:40A LU AFR1645 A319 UUEE LFPG A 380 23-10:50 11:00E f I 11:22 S N N 6274
14:22A LFU FDX5279 B77L VIDP LFPG A 340 23-05:17 05:27E f I 06:20 S N N 6146
14:40A LF ANA205 B77W RJAA LFPG A 360 23-02:50 03:00E f I 03:03 S N N 6007
14:03A BAW314 A319 EGLL LFPG A 220 23-13:00 13:20E N I 13:21 S N N 2261
14:08A AFR279H RJ85 EIDW LFPG A 310 23-12:10 12:28E a I 12:48 S N N 2211
14:21A LF JAL405 B77W RJAA LFPG A 360 23-02:05 02:15E f I 02:29 S N N 2071
14:05A AFR2075 E190 ENGM LFPG A 400 23-11:50 12:10E N I 12:06 S N N 0436
14:00A CYP387 A319 LFPG LCLK A 390 23-13:45 14:01E f I 14:00a C N N
14:00A AFR641Z A320 EHAM LFPG A 230 23-12:55 13:13E N I 13:07 S N N
14:08A LF OMA134 A333 LSZH LFPG A 360 23-12:30 12:50E a I 13:07 S N N
14:09A AFR2342 A320 LFPG LSGG A 270 23-14:00 14:17E f I 14:09a C N N
14:09A AF727PX A318 LFRS LFPG A 260 23-13:25 13:35E N I 13:25 S N N
14:11A LFU TMA137 B763 HLLB LFPG A 380 23-10:45 10:55E f I 10:55 S N N
14:12A LF AFR548 A332 LFPG DRRN A 390 23-14:00 14:15E f I 14:12a C N N
14:13A MSR800 B77W LFPG HECA A 350 23-13:35 13:46E f I 14:13ad C N N
14:14A LU AUA415C A320 LOWW LFPG A 380 23-12:20 12:33E f I 12:37 S N N
14:15A QTR020 A346 LFPG OTBD A 370 23-14:00 14:11E f I 14:15a C N N
14:17A OMA134 A333 LSZH LFPG A 355 23-11:00 NR 11:25E A I 13:13 S N N FLS
14:18A LU SWR63W A319 LSZH LFPG A 310 23-13:10 13:25E N I 13:22 S N N
14:20A LU AFR1215 E190 LSZH LFPG A 310 23-13:35 13:50E u I 13:35 S N N DES
© EUROCONTROL 2011
nop.office@eurocontrol.int
Legal Notice & Disclaimer

Edited & produced by the Directorate Network Management
©2013 The European Organisation for the Safety of Air Navigation (EUROCONTROL)